CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C.   20505

4 November 1968
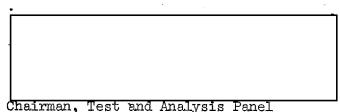
MEMORANDUM FOR   :   COINS Manager

SUBJECT   :   Response of the Test and Analysis Panel to Agency
                     Comments on the Panel's Plan

1.   Attached is the response of the Test and Analysis Panel to the
comments submitted by CIA, DIA, and NSA on the Panel's "Plan for
Gathering, Analyzing and Presenting Data on Performance and Use of COINS."
It seems to us that the agencies' comments do not require any changes in
the plan as submitted originally on 31 May 1968, except for the wording
of the paragraph explaining why we do not plan to gather data on security
aspects of COINS (see our response to CIA's comment 4).

2.   We are awaiting your decision on approval of the plan.   Once it
has been approved, steps will have to be taken to obtain the necessary
forms for gathering data.   And a decision will have to be made on the
schedule for gathering data. - NSA's comment E.3. has a bearing on this
decision -- should the gathering of data be postponed until NSA is pre-
pared to participate?

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Chairman, Test and Analysis Panel

PANEL'S RESPONSE TO CIA COMMENTS

2a. The primary emphasis should be placed on user evaluation as opposed to statistical evaluation. The system could prove optimal in terms of design, implementation, and net result to the user, but if the user, whether subjectively or objectively is not satisfied, then the system is inadequate.

Response:

We agree that primary emphasis in drawing conclusions from the COINS experiment should be placed on user evaluation, but we believe that statistics on performance of the system and on use are also needed and that no change in the test and analysis plan is indicated.

2b. The plan does not provide for the collection of statistical data on the use of COINS files within an agency. Data gathering and analysis seems to be confined to inter-agency requests only. The CIA computer system will keep a log of in-house use and CIA users will be requested to complete log forms when they query CIA files. We feel this is required to get a statistical base against which the extent of inter-agency use may be judged.

Response:

It is correct that the Panel proposed the gathering and analysis of data on interagency queries only, except for data on exogenic queries (internal queries of the COINS files within an agency) that compete with, and affect the response time on, interagency queries. We think it desirable that the participating agencies keep a log of internal use of their COINS files, and are glad that CIA plans to do so. We suggest that the managers of the DIA and NSA COINS subsystems be asked if they could gather data on internal use of their COINS files, which would serve their own purposes and also make possible comparisons of interagency and intra-agency use of the files.

2c. It does not follow that because the experiment is not required to meet economic criteria, there should be no effort made to collect cost data. Collection of cost data may not be the responsibility of this Panel, but it is important that it be collected, since a follow-on system, if any, would have to meet cost-effectiveness tests, and the major purpose of the experiment is to shed light on the desirability of a follow-on.

Response:

    We agree that the gathering of cost data is desirable, although this task was not included in the Panel's assignment. As stated in our proposed plan, however, it was the Panel's impression that the costs of developing this experimental COINS network are inextricably intertwined with the cost of developing files, query languages, and hardware/software complexes for agency systems, and that no records have been maintained of the man-hours devoted to COINS activities. We favor the gathering of cost data if the COINS Manager can determine how valid data can be gathered. We believe it can be done only under the direction and close supervision of the COINS Manager in collaboration with the subsystems' managers in the participating agencies.

    2d. The Agency will place its files on a new computer in January 1969. (IBM 360/50 to computer X). Statistical analysis must therefore take into account the change of hardware and the fact that the first few months will have been on one machine and the last five or six months on a different machine.

Response:

    The proposed plan does envisage statistical analyses that compare use and performance statistics before and after major changes in the system (see page 5, third sentence of third paragraph and Appendix II, page 2, last paragraph).

    3a. The Panel has recommended that the data recorded on the User Log Form be combined with the data from the switch log into a consolidated machine record. Unless the Panel provides guidance on standardizing the recording of this data, both with respect to individual entries over time, and for consistency with the switch log data, there will be no agreement among records. Standardized terminology and recording procedures must be developed for organizational component, terminal identification, name of file, date, time, user number, and analysts name.

Response:

    Since the user log forms are to be sent to DIA where the data on them will be keypunched, the Panel believes that the necessary standardization can be introduced at the time of keypunching as long as there is consistency within an agency as to means of identifying organizational components, terminals, etc.

3b. Each agency will be required to provide an Exogenic Queries Report. Since the plan is not specific on content or format, we assume there will be further guidance on how the data is to be presented.

Response:

It is correct that there will be further guidance on how the data in the Exogenic Queries Report are to be presented. This guidance will come directly from [   ] who will be in charge of the preparation of statistical analyses and who will confer directly with the agency systems people on the exogenic queries data.

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3c. CIA communications personnel are particularly interested in what data is going to be collected on the performance of the switch, so that in future planning we will know what sort of error checking to program for, what storage capacity the buffers should have, etc. The Test and Analysis Panel, as is noted at the top of page 5 of its Report, feels this task is within the purview of the Computer and Communications Interface Panel. Perhaps the data collection plan as related to switch performance could be prepared by that Panel and issued as an appendix to the Test and Analysis Panel Report.

Response:

The Panel suggests direct discussion between [   ] who is in charge of the present COINS switch, and the CIA communications personnel, who are involved in planning for the next generation of COINS.

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3d. The Test Panel's Report does not detail what its continuing rule will be to "oversee and coordinate execution of the approved plan." I would be very much interested in knowing how much guidance and assistance COINS Managers can expect from the Panel or from individual agency members of the Panel.

Response:

The Test and Analysis Panel expects to confer with the COINS managers and to provide further guidance and assistance on the gathering and analysis of data; and also expects to be responsive to special requests the managers may have for statistical analyses. The statistics themselves will also provide certain kinds of needed guidance. If the assistance wanted by the managers should go beyond the time and skills the members can provide, the Panel would then be glad to consider with the managers how best to obtain the necessary help.

4. The second complete paragraph on page 4 of the plan which discusses the Panel's decision to exclude data on the security aspects of COINS appears to be based on erroneous assumptions. We recommend the following text be substituted for the present paragraph:

    a. "The Panel has not made plans for the gathering and analysis of data on security aspects of the COINS experiment because the security procedures for the operation of the network have not yet been thoroughly defined. Moreover, it is believed that the evaluation of the efficacy of security procedures must be accomplished by an appropriately qualified group of security professionals."

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Response:

With one exception, we accept the recommended substitution for the paragraph on security aspects, which appears on page 4 of the Panel's proposed plan. We wish to delete the last part of the first sentence beginning with "because" in line 2 and "Moreover," at the beginning of the second sentence.

5a. Page 8, 2(b) is not clear. What is meant by "different computer systems."

Response:

"Different computer systems" in (2b) on page 8 means "different agency computer systems."

5b. Page 9 - The last sentence of the Current Demand Section should be revised as follows for clarity: "...could have been answered in the time required without the use of COINS."

Response:

The suggested revision of wording will be taken into account when statistical summaries are prepared.

5c. It would be useful to footnote in lay language the meaning of "parity errors" on Page 10, System Reliability.

<u>Response</u>:

We do not believe that every summary presenting statistical data on effectiveness need explain what is meant by parity errors. Briefly, a parity error is an incorrect transmission of a character in a message that is detected by means of redundant information carried along with the representation of the character as a check on the correctness of its transmission.

5d. Appendix II, page 3 - The last sentence of the first paragraph reads as though there is no plan to collect experimental data on transmission time <u>at all</u>.

<u>Response</u>:

The sentence in question states that it is not planned to collect experimental data on <u>retrieval</u> time; concerning <u>transmission</u> time, it says that experimental data will not be collected until data obtained from operational use have been examined. Such experimental data on transmission time will be collected if the data from actual use of the system in the first part of the test period do not cover a broad range of workload conditions.

PANEL'S RESPONSE TO DIA COMMENTS

2.a. It is DIA's feeling that when a user expresses either satis-
faction or dissatisfaction with the performance of COINS, the report
should show exactly what portion of COINS he is talking about; for
example, is he unhappy with the entire COINS network, or does he only
have trouble with the CIA portion or some other portion of the system.
If he says that the COINS performance is outstanding, does he mean that
the entire network is excellent, or that he only uses the NSA files and
finds this link performs very well.

b. It is recommended that the following specific items in referenced
plan be changed to reflect the intent of paragraph 2.a., above.

(1) Page 9, paragraph 3.a., subparagraphs titled Current Demand,
Ease of Use, and Degree of Interest.

(2) Page 10, paragraph 3.b., subparagraph titled System
Reliability.

(3) Page 11, paragraph 3.b.

c. Reference page 10, paragraph 3.b., subparagraph titled Operational
Readiness. It would seem that a true picture of the system readiness would
be presented if only major components, i.e., computers, were covered. Un-
less all remote devices in a particular agency were out at one time, or
one or two terminals were out for an extended time period, remote terminals
should not be considered in the term "all components."

Response:

The plan as presented is considered to cover adequately the points
raised in these comments. An expression of user satisfaction or dis-
satisfaction on the log form will pertain to a particular response from
a particular file; and the interview portion of the plan is meant to
elicit the other information desired. "Operational readiness" does pertain
only to computer systems (see page 8 of the plan).

PANEL'S RESPONSE TO NSA COMMENTS

B.   Paragraph IB - I recognize the need for the panel's studied care in defining COINS. I feel, however, that the description as a transfer system rather than an intricate storage and exchange mechanism is too strict. This may cause problems in future development of this or successor systems.

Response:

It was not the Panel's intention to preclude future studies of the content and of the storage and retrieval programs of the files included in the COINS system. In point of fact, the data on retrieval time, usage and user reactions should indicate the areas where such studies can most profitably be undertaken. Hence, there is no objection to the definition of COINS II as an information system and to definition of COINS I as the transfer component of such a system. The present system, however, accepts the files and procedures as given and should not, therefore, be evaluated as an information system. To be specific, there is a very considerable danger that lack of use of the system due to the content of the files and to lack of familiarity of the analysts with the procedures will be attributed to defects in the transfer component itself. And it is this error which the stress upon the transfer sub-system was intended to avoid.

C.1.   If the switch log can be maintained automatically, it might be possible to provide much of the information for the user's log the same way. A requirement that each user include his name, identification number and section routinely in each query should suffice. The Switch Log records the computer system originating the message plus the equipment number where a reply is expected which together identify the requesting and responding agency.

Response:

These comments are in accordance with the decision to consolidate all of the basic information about each query in a single record as soon as possible. The switch log will be used to the fullest extent possible, and the information requested at the top of the User Log Form will be reduced to the minimum necessary for correlating the user log and the switch log data.

C.2. A deficiency which now exists is the fact that the system does not repeat the query as submitted along with the response which comes back to the user. It should also be possible for the user to type in at the query terminals his comments for items one (1) through five (5) of the COINS User Log Form given in Appendix I-A. By repeating the identification information and the query reference number, the Switch Log maintained automatically at DIA should be able to relate feedback comments to the original query.

Response:

It is simply not feasible at this time to change software packages in order to gather user reactions from the terminal keyboards; nor would the cost of such changes be justified for a data-gathering effort lasting only six months or so. Moreover, the Panel believes that it will be easier for most users to make check marks on a log sheet than to type in answers on a keyboard.

C.3. The COINS User Log Form (Appendix I-A) is supposed to be filled out by the user at the terminal (according to page 7). Will he typically know right away that a response is unsatisfactory because of reasons (a), (b), (c), or (e)? If not, is there provision for him to come back later and demand the Log Form (or an expectation that he would bother)?

Response:

As a rule, data obtained from a questionnaire are both incomplete and inaccurate. The User Log Form is viewed primarily as a source of leads for the interviewer rather than as a source of firm data. Gaps in the questionnaire responses can be filled in by the interviews. With respect to the possibility that a user will not know right away if a response is satisfactory, it may prove to be feasible to have him take the form with him and complete it and forward it to a collection point the following day.

C.4. Since competition is a symmetric process any deleterious effects on COINS Users from exogenetes (i.e., askers of exogenetic queries) will have their counterparts in delays, etc. for the exogenetes. Shouldn't one measure of COINS effectiveness be the degree to which it interferes with normal in-house operations at each of the participating agencies?

Response:

The Panel does not consider it either feasible or advisable to enter upon an evaluation of the impact of the COINS system upon in-house operations. Such studies, although desirable and certainly germane to the overall problem, should be undertaken by the individual agencies concerned.

C.5. In addition to ignoring the software component of the individual participating agencies the document in question contemplates no explicit reaction by a user to the specific constraints imposed upon him, differentially by the various participants in COINS. Question 1 on the COINS User Log Form allows one of three responses on the ease of using COINS as a whole, but neither there nor elsewhere on the form can the user easily specify which agency, or which query language was particularly burdensome to use. In the same vein the suggested form seems unlikely to voice a comment that language x, say, required the user to submit four queries to obtain the answer to one question while the question couldn't even be phrased in language y.

Response:

The User Log Form asks about a particular query of a particular file; and "question" 5 on the form invites the user to make explanatory comments if he wishes. However, it is expected that the more specific information will be obtained in the course of the interviews in any case.

D. Paragraph II.B. 1, 2. The number of interviewers to be trained, by whom and how are questions for which I have no good answer. The number depends on the number of users to be queried over a several month period. I would hope that could be kept to a modest number. Selection and length of training period will be made more difficult as the number of interviewers and/or interviewees grows.

Response:

Answers to these questions will become available after the initial data on system usage has been collected.

E.1. Outside of this plan what is the threshhold to judge success? Will performance objectives be set for example, response time or percentage of satisfactory replies, or the contribution of replies? In any event those looking at the results of this effort must have some basis for judgment.

Response:

The decision as to success or failure of the system is outside the scope of this plan; in the absence of an agreed-upon procedure for determining the value of intelligence information, this cannot be determined objectively and is, therefore, necessarily left to managerial judgment.

E.2. In this context no qualification seems to have been applied to the query and/or the user. If the query is one that the system seems to take an overly long time to respond to it may be unjustly criticized by an impatient and/or inexperienced user. Similarly, what about the status of the user? Will he be a relatively inexperienced individual or a fairly knowledgeable person who can be expected to try to schedule his queries so as to arrange response times according to results desired.

Response:

The point is well-taken that the response of a user will depend on his level of competence both as an analyst and as an information retrieval specialist. The Panel does not, however, consider it either feasible or desirable to enter upon an evaluation of the analyst's competence; however, since usage data is to be analyzed by section and by file, differences between different analysts on similar problems may be detectable.

E.3. Lastly, this agency will not be prepared to participate in the evaluation until the TIPS I/COINS I system is in working status. Tentatively, this is expected to be early in calendar year 1969.

Response:

The Panel would appreciate an explanation of the implications of this statement for the initiation of data collection. In the Panel's view, the User Log Form should be placed in use as soon as all six participating agencies are tied in and able to query COINS files in other agencies. Initially, the data gathered from users will not be particularly meaningful, because the system will be in a "shake-down" period; but such data will be needed in order to check on the design of the User Log Form itself and to aid in the design of the interview portion of the test plan.